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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PHAM, KHANH B

ART UNIT PAPER NUMBER

2167

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,782

Applicant(s)

BICKERS ET AL.

Examiner

Khanh B. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-13 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-13 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 1,5 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's submission filed on July 8, 2005 has been entered. Claims 1, 3, 5, 6, 10, 16, 18 and 19 have been amended. Claims 1, 3-6, 8-13, 16-20 are pending in this Office Action.

Claim Objections

2. **Claims 1, 5, 10** are objected to because of the following informalities:
- Claim 1 recites the limitation "said logical data" in line 12. There is insufficient antecedent basis for this limitation in the claim. The examiner presumes the phrase should read: "said partitioned logical data".
 - Claim 5 recites the limitation "said logical data" in lines 6, 18. There is insufficient antecedent basis for this limitation in the claim. The examiner presumes the phrase should read: "said partitioned logical data".
 - Claim 10 recites the limitation "said logical data" in line 16. There is insufficient antecedent basis for this limitation in the claim. The examiner presumes the phrase should read: "said partitioned logical data".

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1, 3-6, 8-13, 16-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaath et al. (US 6,546,384 B2), hereinafter "**Shaath**", and in view of "Dahlerud" (US 5,982,572 A), hereinafter "**Dahlerud**".

As per claim 1, Shaath teaches a method of centralized data position information storage and utilization comprising the steps of:

- "arranging a byte stream of data into partitioned logical data" at Figs. 3e-3h;
- "storing data position information relating to said logical data in a reserve storage area" at Col. 5 lines 15-16 and Col. 5 line 66 to Col. 6 line 4;
- "said data position information comprising logical data position information" at Col. 7 lines 37-49 and Fig. 2, 54;

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- “transferring all said information from said reserve storage area only to a centralized storage area, wherein said centralized storage area is configured to store said information relating to substantially all said partitioned logical data” at Col. 5 lines 1-17;
- “locating target data that is part of said logical data by applying a search algorithm to said data position information stored in said centralized storage area, said search algorithm being configured to locate said target data” at Col. 9 line 55 to Col. 10 line 42;

The difference between Shaath’s teaching and the invention of claim 1 is that Shaath does not teach the data position information comprising both “logical data position information and physical data position information” as claimed. However, Dahlerud teaches a similar method (Col. 2 lines 25-65) for storing data position information relating to data stored on a tape using a Block Map, wherein the Block Map is “a connection table between logical blocks, tapemarks and their corresponding physical block and track position”. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Shaath and Dahlerud’s teaching in order to enable faster access to data. Adding physical data position information would “avoids the problem with logical block address in the tape format and enables fast access to any position in both forward and reverse direction in a minimum time... in comparison with the standard method, be reduced from several hours to approximately 3 minutes”, at suggested by Dahlerud at Col. 2 lines 30-35.

As per claim 3, Shaath and Dahlerud teach the method as claimed in claim 1 discussed above. Shaath also teaches: “wherein said logical data comprises records and filemarks, said centralized storage area stores data position information relating to said records and said filemarks in a data table, the locating step includes reading from the data table the stored position information relating to said records and said filemarks” at Col. 7 lines 37-49.

As per claim 4, Shaath and Dahlerud teach the method as claimed in claim 1 discussed above. Shaath also teaches: “wherein said centralized storage area stores logical data position information relating to a plurality of selected logical data groups, the locating step including reading the stored logical data position information relating to the plurality of selected logical data groups” at Figs. 3a-3h and Col. 6 lines 21-25.

As per claim 5, Shaath and Dahlerud teach a method of storing and utilizing data position information on a tape data storage device, said method comprising the steps of:

- “arranging a byte stream of data into partitioned logical data” at Figs. 3e-3h;
- “recording said partition logical data onto a length of tape” at Figs. 3e-3h;
- “storing data position information relating to said logical data in a reserve storage area” at Col. 5 lines 15-16 and Col. 5 line 66 to Col. 6 line 4;
- “said data position information comprising logical data position information” at Col. 7 lines 37-49

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- “transferring all said information from said reserve storage area only to a centralized storage area located within said tape device, wherein said centralized storage area is configured to store said information relating to substantially all said partitioned logical data” at Col. 5 lines 1-17;
- “locating target data on said tape by applying a search algorithm to said data position information stored in the centralized storage area, said search algorithm being configured to locate said target data” at Col. 9 line 55 to Col. 10 line 42;
- “determining the required transporting of said logical data relative to a read head to enable said target data to be read, said target data being part of said logical data” at Fig. 9.
- “reading said target data by using the read head when the logical data is at the read head” at Col. 15 lines 5-15.

The difference between Shaath's teaching and the invention of claim 5 is that Shaath does not teach the data position information comprising both “logical data position information and physical data position information” as claimed. However, Dahlerud teaches a similar method (Col. 2 lines 25-65) for storing data position information relating to data stored on a tape using a Block Map, wherein the Block Map is “a connection table between logical blocks, tapemarks and their corresponding physical block and track position”. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Shaath and Dahlerud's teaching in order to enable faster access to data. Adding physical data position

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information would “avoid the problem with logical block address in the tape format and enables fast access to any position in both forward and reverse direction in a minimum time... in comparison with the standard method, be reduced from several hours to approximately 3 minutes”, as suggested by Dahlerud at Col. 2 lines 30-35.

As per claim 6, Shaath and Dahlerud teach the method as claimed in claim 5 as discussed above. Shaath also teaches: “wherein the step of transferring said data position information comprises:

- transferring said information to a data table within said centralized storage area” at Col. 6 lines 21-25;
- “arranging said information within said data table so as to minimize the time period taken to locate said target data on said tape when utilizing said information” at Col. 5 lines 5-17.

As per claim 8, Shaath and Dahlerud teach the method as claimed in claim 5 discussed above. Shaath also teaches: “wherein said data position information in said centralized storage area relates to a plurality of selected data groups, said data groups being distributed along the length of the tape” at Figs. 3a-3h and Col. 5 lines 1-17.

As per claim 9, Shaath and Dahlerud teach the method as claimed in claim 5 further comprising the step of: transferring said data position information in said centralized storage area to a reserve storage area” at Col. 6 lines 21-25.

As per claim 10, Shaath teaches a data position information storage and utilization device comprising:

- “partitioned logical data distributed across a length of tape” at Fig. 1;
- “a reserve storage area storing data position information relating to said partitioned logical data” at Col. 5 line 55 to Col. 6 line 20;
- “said data position information comprising logical data position information” at Col. 7 lines 37-49;
- “a centralized storage area configured to store said information received from said reserve storage area, said centralized storage area being configured to store information relating to substantially all said partitioned logical data” at Col. 5 lines 1-17;
- “a processing arrangement for transferring all said information from said reserve storage area only to a centralized storage area” at Col. 5 lines 5-17
- “a search algorithm for determining the location of target data on said tape” at Col. 9 line 55 to Col. 10 line 42;
- “and a read head configured to read said logical data on said tape; said device being operable, in response to a request for said target data, to locate said target data on said tape in response to (a) information in said centralized storage area and (b) the target data location determined by the search algorithm, and to read

said target data by using said read head” at Col. 15 lines 5-15 and Fig. 9, element 220.

The difference between Shaath's teaching and the invention of claim 10 is that Shaath does not teach the data position information comprising both “logical data position information and physical data position information” as claimed. However, Dahlerud teaches a similar method (Col. 2 lines 25-65) for storing data position information relating to data stored on a tape using a Block Map, wherein the Block Map is “a connection table between logical blocks, tapemarks and their corresponding physical block and track position”. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Shaath and Dahlerud's teaching in order to enable faster access to data. Adding physical data position information would “avoids the problem with logical block address in the tape format and enables fast access to any position in both forward and reverse direction in a minimum time... in comparison with the standard method, be reduced from several hours to approximately 3 minutes”, as suggested by Dahlerud at Col. 2 lines 30-35.

As per claim 11, Shaath and Dahlerud teach the device as claimed in claim 10 discussed above. Shaath also teaches: “wherein said reserve storage area is located on at least one portion of said tape” at Fig. 2, element 22.

As per claim 12, Shaath and Dahlerud teach the device as claimed in claim 10 discussed above. Shaath also teaches: “wherein said reserve storage area is in a cartridge memory” at Fig. 2, element 22.

As per claim 13, Shaath and Dahlerud teach the device as claimed in claim 10 discussed above. Shaath also teaches: "wherein said centralized storage area is located substantially within a tape drive including said read head" at Col. 5 lines 16-17.

As per claim 16, Shaath and Dahlerud teach the method of claim 1 discussed above. Dahlerud also teaches: "wherein the reserve storage area is volatile memory external to the tape" at Col. 3 lines 45-50, and "erasing the volatile memory in response to the tap being removed from a device for reading the tape" at Col. 2 lines 57-58.

As per claim 17, Shaath and Dahlerud teach the device of claim 10 discussed above. Dahlerud also teaches: "wherein the reserve storage area is volatile memory external to the tape" at Col. 3 lines 45-50.

As per claims 18, 19, Shaath and Dahlerud teach the method of claim 5 discussed above. Shaath also teaches: "wherein the tape includes plural parallel tracks, and the algorithm derives a physical target position for a track different from the track where the head is positioned in response to indications of logical current and logical target positions without going to a beginning of wrap or an end of wrap" at Col. 14 line 56 to Col. 15 line 16.

As per claim 20, Shaath and Dahlerud teach the device of claim 19 discussed above. Dahlerud also teaches: "wherein the reserve storage area is volatile memory external to the tape" at Col. 3 lines 45-50.

Response to Arguments

6. Applicant's arguments filed July 8, 2005 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Pham whose telephone number is (571) 272-4116. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Khanh B. Pham
Examiner
Art Unit 2167

September 30, 2005

A handwritten signature in black ink, appearing to read 'Khanh B. Pham', with a long horizontal flourish underneath.